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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FERRIS, DERRICK W	
ART UNIT	**PAPER NUMBER**
2663	

DATE MAILED: 03/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/513,912	PATEL ET AL.	
	Examiner	Art Unit	
	Derrick W. Ferris	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-7,11-53,55-57 and 61-132* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,11-53,55-57 and 61-132* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/03/04 has been entered.

Response to Amendment

2. **Claims 1-3, 5-7, 11-53, 55-57, and 61-132** as amended are still in consideration for this application. Applicant has amended claims 1, 2, 5, 11-14, 51, 52, 55, 61, 62, 101, 111, 120, 123,and 128. Applicant has canceled claims 4, 8-10, 54, and 58-60.

3. Examiner **withdraws** all obviousness rejections that include the *Puuskari* reference for Office action filed 11/04/2003.

At issue for **claims 1, 51, and 128** is the newly amended limitation a "physical location" of the mobile device in the wireless network and the context of assigning each packet to a virtual group based on the "physical location". Examiner notes a broad but reasonable interpretation of "physical location". See e.g., page 23, lines –17 in relation to middle of page 7 of *Puuskari*. In particular, since a logical address, such as an IP address (i.e., a source and/or destination address), marks a physical device as part of a PDP context, examiner notes a reasonable but broad interpretation of "physical location". Applicant appears to disagree stating that a "physical location" is dynamic in nature and may change over the course of the route. Examiner disagrees. In particular, the IP

address in part represents the mobile device which acts as a physical location of a mobile device in a wireless network using a reasonable but broad interpretation of "physical location". This concept is further supported by applicant in applicant's specification at top of page 25 using an IP address (as part of a tuple). With respect to the further limitation of assigning each packet to one of a plurality of "virtual groups" based on the location for the corresponding flow, the virtual groups comprising discrete transmission resources see figure 11 of *Forslow* in relation to the queuing structure of the SGSN. In particular, note that each application flow is queued and handled separately. See newly rewritten rejection below.

As to **claims 101 and 111**, applicant has amended the claims to further recite that the status comprises either network loading or performance information. Support for the amendment is found, inter alia, at page 19, lines 25-28. *Puuskari* teaches the QoS information associated with each data packet includes at least priority information and traffic type information as well as optionally including reliability information (e.g., see page 6, lines 9-24 and page 15, lines 3-13). Examiner notes that *Kalliokulju* further teaches traffic class parameters that include performance information using a reasonable but broad interpretation of performance information. See new rejection below.

As to **claims 120 and 123**, see figure 11 of *Forslow* in relation to the queuing structure of the SGSN.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1, 5-6, 11, 15-16, 23-33, 35-37, 39, 42-44, 48-50, 51, 55-56, 61, 63-66, 73-83, 85-87, 89, 92-94, 98-100, 120, 123, and 126-132** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen*.

As to **claims 1, 51 and 128**, applicant claims a method of grouping packets with a common flow identifier using a generic concept of virtual groups. Examiner notes that virtual groups are nothing more than an aggregation of flows having one or more similar characteristic as defined, inter alia, in applicant's specification on page 21, lines 8-18. *Puuskari* discloses a dynamic packet-base quality of service (QoS) mechanism provided within a "transmission tunnel" defined by a more static packet data protocol context (PDP context). *Puuskari* discloses in figure 2 going from a wireless protocol to a wireline protocol wherein the wireline protocol is an encapsulated protocol (i.e., GTP) in combination with IP (note that IP extends to the mobile in the form of a PDP context, e.g., see page 15 of *Puuskari*). The examiner would like to point out that applicant's claims may not clearly define the perspective or direction of a particular traffic flow with respect to queuing traffic thus leaving the examiner with a reasonable but broad interpretation of the recited claimed subject matter. As such, *Puuskari* teaches receiving a stream of packets where each stream of packets is unique based on the IP address as uniquely identifying a flow. Applicant supports the above concept in applicant's specification at top of page 25 using an IP address (as part of a tuple). Examiner notes

that also inherently or indirectly the flow identifier also acts as a "physical location" of a mobile device in the wireless network. In particular, the IP address addresses a specific flow in the network for a particular mobile device thus meeting the requirement using a reasonable but broad interpretation of "physical location".

Puuskari may be silent or deficient to the further limitation "assigning each packet to one of a plurality of virtual groups based on the location for the corresponding flow, the virtual group comprising discrete transmission resources". In particular, *Puuskari* teaches that the GGSN or an external host may optimally maintain information about different application connections and traffic flows but is not required (see page 23, lines 1-5).

Forslow cures the above-cited deficiency by supporting multiple flows for a mobile based on the application layer (e.g., see top of page 9).

Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention include the to limitation "assigning each packet to one of a plurality of virtual groups based on the location for the corresponding flow, the virtual group comprising discrete transmission resources". In particular, one would be motivated to perform such an action in order to provide dynamic QoS per session for each application. Thus *Forslow* discloses such a motivation (see abstract) and provides a reasonable expectation of success based on page 23, lines 1-5 of *Puuskari*. Furthermore, *Forslow* discloses using a queue for each application flow, see figure 11. In addition, assuming, arguendo, that *Puuskari* does not teach determining for each packet based on the included flow identifier a location of the corresponding flow, *Mikkonen* further teaches using a

separate flow identifier. Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to use a separate flow identifier as an IP tag (e.g., see column 7, lines 21-67 and column 9, lines 30-55 of *Mikkonen*). In particular, one skilled in the art would be motivated to using an IP tag to switch each packet since switching at layer 2 is faster then use the network address (i.e., network flow identifier or IP address). In particular, *Mikkonen* discloses this motivation found at column 9, lines 54-67. Examiner also notes a reasonable expected level of success since the IP header is used in determining a label for each packet (e.g., see figure 4b).

As to **claims 5, and 55**, see the same reasoning behind the rejection for claim 2.

As to **claims 6 and 56**, see the reasoning behind the rejection for claim 3.

As to **claims 11 and 61**, see the reasoning behind the rejection for claim 3.

As to **claims 15 and 65**, see the reasoning behind the rejection for claim 2.

As to **claims 16 and 66**, see the reasoning behind the rejection for claim 3.

As to **claims 23 and 73**, see the reasoning behind the rejection for claim 2.

As to **claims 24 and 74**, not clearly disclosed by the reference is an SLA agreement per se. However, *Puuskari* discloses a reasonable but broad interpretation of an SLA in the form of a user agreement as is known in the art for user QoS. Thus using a reasonable but broad interpretation, an SLA agreement is taught by *Puuskari.*

As to **claims 25-29, 75-79**, *Puuskari* discloses associating QoS information with priority information and traffic type [page 6] along with QoS profile information [page 17] which includes peak rate, subscriber rate, maximum burst size, packet size, and delay threshold.

As to **claims 30 and 80**, see the reasoning behind the rejection for claim 2.

As to **claims 31, 32, 81 and 82**, see the reasoning behind the rejection for claim 3.

As to **claims 33, 35, 83 and 85**, *Puuskari* discloses using a layered approach as is known in the art such that either a multi-slot/multi-code or multi-mode indicator (e.g., scheduling determines which slots packets will be transmitted as is well known in the art).

As to **claims 36 and 86**, *Puuskari* discloses a dynamic method.

As to **claims 37 and 87**, *Puuskari* discloses defining the flows to account for the impact of flows (i.e., deal with congestion) [e.g., page 6].

As to **claims 39 and 89**, see the reasoning behind the rejection for claim 2.

As to **claims 42 and 92**, *Puuskari* discloses "metering" packets by discarding packets in a network that do not conform with QoS as is known in the art [e.g., page 6, lines 9-24; page 21, lines 33-35; page 22, line 1].

As to **claims 43, 44, 48, 93, 94, 98 and 108**, *Puuskari* discloses controlling congestion based on available bandwidth [e.g., page 6, lines 9-24].

As to **claims 49-50, 99-100,** *Puuskari* discloses adjusting for QoS dynamically (i.e., dynamically assigning a subsequent packet to a new group based on new attributes for the flow) [e.g., page 6, lines 3-8]. As the service may change, examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to also move the packet into another queue since each queue is based on a different level of service (e.g., see page 2, lines 17-24). Examiner furthermore points that no clear reference is given with respect to a first and/or second location such that examiner has taken a

reasonable but broad interpretation of the claimed subject matter with respect to a first and second location.

As to **claims 63, 118 and 126**, it would have been obvious to a skilled artisan prior to applicant's invention to implement the system as disclosed by *Puuskari* in software where the motivation is an obvious design consideration/choice.

As to **claims 64, 119 and 127**, it would have been obvious to a skilled artisan prior to applicant's invention to use a processor in general for implementing both a dynamic flow manager and virtual groups. As mentioned above, the general functionality of each is taught by *Puuskari* where the functionality is implement in either software or hardware using a processor (used to control the hardware or software as is known in the art).

As to **claims 120 and 123**, in addition to the rejection for claim 1 with respect to location, it may not be clear from *Puuskari* of queuing a packet for a corresponding flow to a first location in a wireless network in a first queue associated with a first location see e.g., page 2, lines 17-24 of *Puuskari*.

Forslow further discloses a queuing strategy for groups of flows which includes the above limitation for both a first and second location e.g., see figure 11.

Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include queuing a packet for a corresponding flow to a first location in a wireless network in a first queue associated with a first location. In particular, one skilled in the art would have been motivated to use a separate queue for

each particular application flow as shown in figure 11, e.g., see page 21, lines 6-23 of *Forslow*.

As to **claim 129**, see the rejection for claim 3.

As to **claim 130**, see the rejection for claim 43.

As to **claim 131**, see the combined rejection for claim 42 and 44.

As to **claim 132**, see the rejection for claim 123.

6. **Claims 101-103, 108-109, 111-113, 117-119** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow*.

As to **claims 101, and 111**, *Puuskari* discloses generating dynamic congestion control parameters for a wireless traffic queue based on a status of the wireless network through the use of QoS parameters as disclosed throughout the specification (e.g., see page 6, lines 9-11 and page 7, lines 7-8). *Puuskari* also discloses dropping excess packets destined for a wireless traffic queue based on dynamic congestion control parameters (as mentioned in the rejection for claim 44).

Puuskari may be unclear with respect to generating dynamic congestion control parameters for a wireless traffic queue based on a status of the wireless network, the status comprising either network loading or performance information e.g., see page 6, lines 9-24.

Forslow discloses performing dynamic QoS as well as using RSVP such that network loading or performance information is taught as part of RSVP, e.g., see page 20, lines 1-21.

Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to perform generating dynamic congestion control parameters for a wireless traffic queue based on the status of the wireless network, the status comprising either network loading or performance information. In particular, one skilled in the art would be motivated to modify *Puuskari* to include queues for each application flow such that the queue is also setup with respect to RSVP where RSVP encompasses network loading information. In particular, if the network is overloaded then the RSVP tunnel is not established and the tunnel is dropped thus teaching a reasonable but broad interpretation of "network loading". Similarly packets are added when the connections are established.

As to **claims 102, 103, 112, and 113**, examiner notes that the services setup using Intserv uses available bandwidth network since the connection will not be established (i.e., reserved) if not enough bandwidth is present in the network [e.g., see RSVP on page 23].

As to **claim 108**, see figure 11 of *Forslow*.

As to **claim 109**, *Puuskari* provides QoS for real-time services [e.g., page 6, lines 9-24].

As to **claim 117**, *Puuskari* discloses service queues in general for more than one QoS class, thus a plurality of service queues is disclosed along with congestion control in general.

As to **claims 118-119**, see e.g., *Forslow* page 20, lines 1-20

7. **Claims 2, 3,** 7, **34, 52, 53, 57 and 84** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* and U.S. Patent No. 6,356,759 B1 to *Mustajarvi*.

As to **claims 2, 3, 7, 34, 52, 53, 57 and 84**, *Puuskari, Forslow,* and *Mikkonen* may be silent or deficient to using a power level indicator as part of a QoS characteristic. In particular, *Puuskari* and *Forslow* discloses using characteristics in general to group packets for QoS. Thus examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to use a power level as part of QoS since a power level can be represented as part of a packet as is known in the art. *Mustajarvi* discloses using a power indicator as part of a packet (see figure 4) thus providing a motivation for using a power level indicator as part of a QoS characteristic.

8. **Claims 12-14, 17-18, 20-22, 45, 62, 67-68, 70-72, and 95** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* , "Quasi-Source Resource Allocation with Interference Avoidance for Fixed Wireless Systems" by *Chawla et al.* ("*Chawla*") and U.S. Patent No. 6,021,309 to *Sherman et al.* ("*Sherman*").

As to **claims 12-14, 17-18, 20-22, 45, 62, 67-68, 70-72, and 95**, *Puuskari* is generally silent to the physical attributes of the wireless system (i.e., the sector placement, latitude and longitude, specific beam width within a sector). Examiner notes that it would have been obvious to a skilled artisan to realize that physical attributes impact QoS in general. For example, *Chawla* discloses using beams to sector a cell as is

known in the art. Examiner notes that a skilled artisan would also recognize that certain inherent latitude and longitude values will place the mobile within a specific sector of a cell. In another example, *Sherman* also discloses the general use of geographical-defined service areas along with a frequency re-use pattern (i.e., frequency plan).

9. **Claims 104, 107, and 114** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view "Quasi-Source Resource Allocation with Interference Avoidance for Fixed Wireless Systems" by *Chawla et al.* ("*Chawla*") and U.S. Patent No. 6,021,309 to *Sherman et al.* ("*Sherman*").

As to **claims 104, 107 and 114**, *Puuskari* is generally silent to the physical attributes of the wireless system (i.e., the sector placement, latitude and longitude, specific beam width within a sector). Examiner notes that it would have been obvious to a skilled artisan to realize that physical attributes impact QoS in general. For example, *Chawla* discloses using beams to sector a cell as is known in the art. Examiner notes that a skilled artisan would also recognize that certain inherent latitude and longitude values will place the mobile within a specific sector of a cell. In another example, *Sherman* also discloses the general use of geographical-defined service areas along with a frequency re-use pattern (i.e., frequency plan).

10. **Claims 19 and 69** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* , "Quasi-Source Resource Allocation with Interference Avoidance for Fixed Wireless Systems" by *Chawla et al.* ("*Chawla*") and U.S. Patent No. 5,987,326 to *Tiedemann, Jr. et al.*

As to **claims 19 and 69**, *Puuskari* is silent or deficient to performing a soft handoff as is known in the art for a wireless system in general. *Tiedemann* makes up for such a deficiency by disclosing how a soft handoff is performed and parameters needed to perform the handoff (e.g., see figure 3). Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to further perform a soft handover as part of a parameter. *Tiedemann* provides a motivation for performing a soft handover which includes the parameters as recited in the claims. Thus *Tiedemann* cures the above-cited deficiency.

11. **Claims 38, 40, 88 and 90** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* and U.S. Patent No. 5,926,458 to *Yin.*

As to **claims 38, 40, 88 and 90**, *Puuskari* is silent or deficient to the type of buffering scheme deployed in a wireless system. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to use a common memory (in general) consisting of buffers/queues for each virtual group. As support, *Yin* discloses a virtual groups consisting of buffers which form a common memory, thus *Yin* provides a motivation for using a common memory in general (see figure 2 for a common outgoing buffer).

12. **Claims 41, 91, 121, 122, 124 and 125** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* and U.S. Patent No. 5,926,458 to *Yin* in further view of "Service Scheduling for General Packet Radio Service Classes" to *Pang et al.* ("*Pang*").

As to **claims 41, 91, 121, 122, 124 and 125**, both *Puuskari* and *Yin* are silent to using a FIFO buffer in general. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to use a FIFO buffer with QoS queuing. *Pang* provides a motivation by disclosing that FIFO queuing for QoS is used when scheduling is concerned (see section II (a) on page 1230). Examiner also notes a reasonable but broad interpretation of queue identifier.

13. **Claims 46-47, 96, and 97** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* and "Quality of service management functions in 3rd generation mobile telecommunication networks" to *Kalliokulju*.

As to **claims 46-47, 96, and 97,** it may not be clear from *Puuskari* that available bandwidth is based on air-resource estimates, pricing strategy information, or historical usage information respectfully. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to include various available bandwidth indicators including air-resource estimates, pricing strategy information, or historical usage. *Kalliokulju* provides further motivation by disclosing various available bandwidth indications in general including air-resource estimates, pricing strategy, and historical usage information (e.g., page 1285).

14. **Claims 105, 106, 110, 115, and 116** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of "Quality of service management functions in 3rd generation mobile telecommunication networks" to *Kalliokulju*.

As to **claims 105, 106, 110, 115, and 116,** it may not be clear from *Puuskari* that available bandwidth is based on air-resource estimates, pricing strategy information, or historical usage information respectfully. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to include various available bandwidth indicators including air-resource estimates, pricing strategy information, or historical usage. *Kalliokulju* provides further motivation by disclosing various available bandwidth indications in general including air-resource estimates, pricing strategy, and historical usage information (e.g., page 1285).

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- "Soft State Switching draft-viswanathan-mpls-rsvp-00.txt" further defines using an MPLS label in replacing or upgrading an RSVP network such as the one purposed by GPRS. In particular, a label used as a type of label 60 as disclosed in applicant's figure 3 and disclosed at page 25.
- "Use of Label Switching With RSVP" further defines using an MPLS label in replacing or upgrading an RSVP network such as the one purposed by GPRS. In particular, a label used as a type of label 60 as disclosed in applicant's figure 3 and disclosed at page 25.
- US006631122B1 discloses using Diff Serv model as opposed to RSVP for a GPRS network.

- US006690679B1 discloses ranging QoS into groups of flows see Abstract and figure 2 in relation to the prior art shown in figure 1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derrick W. Ferris
Examiner
Art Unit 2663

DWF

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 3/1/04